

Exploration  
vs  
Dehydration  
or  
Reaching for the stars  
while others starve

An essay by Eldon KR  
written 10/07/09

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When I first started doing research for this essay, I wasn't sure where I would stand on this subject. And now that I'm sitting down to write it I still haven't reached a decision. Hopefully in writing it I'll be able to make up my mind, or at the very least, help you decide where you stand with the information that I provide. The topic of this essay was inspired by a discussion between two characters in Dan Sawyers, "Down From Ten". Upon hearing of this I felt compelled to do some research on the subject. After a few days of Googling I have come up with quite a bit.

NASA requests billions of dollars every year in funding to do various forms of research, ranging from more advanced global positioning and mapping systems to space exploration, even climate control. According to NASA's most recent, "NASA FY 2010 Budget Summary Update", NASA has requested \$18.686 billion for the year of 2010. Though this may seem like a lot of money to be asking for, but NASA's projects can get very expensive. For example it cost NASA over \$20 million to build the Spitzer Space Telescope. The sole purpose of this telescope is to fly it into a black hole in the center of the galaxy just to see what will happen. But it's not as if they squander the money they get for funding. They made several discoveries and ground breaking progress in their projects just this year alone, which will be discussed in later paragraphs.

As stated in the previous paragraph NASA has requested \$18.686 billion for their funding for the year of 2010. Just to show you that they're not squandering the money on ways to build a cooler paper airplane. Here is some of the progress they have made in 2009 alone. Water ice has been discovered on Mars, which could mean that Mars has either at one point in time sustained life, or, it represents the possibility for the red planet to sustain life. The Cassini spacecraft is providing valuable information and stunning photographs of Saturn and it's moons. Nineteen fly-bys of Titan provided enough information to create a 3D topographic map of the terrain of the moon, revealing mountains, polar lakes, vast dunes, and flows from possible ice volcanoes. And that's just some of the progress that they've made as stated in their 2010 budget summary update.

At this point some readers of this essay are probably thinking, "Sure, they're doing nifty things with rocket ships and satellites. But what does this have to do with us as a people?" Well, if we advance our space program, we can outlive our sun. In almost every Sci-Fi television program and film, and even in science class, they tell you that one day our sun is going to expand to the point to where it will engulf the Earth. That's game over for the planet. In theory, if we haven't made drastic adjustments to our space program, that's game over for the human race as well. With all of the progress that NASA makes on the space program it is very possible that one day we'll be able to experience life

among the stars. We will outlive our own planet and our sun. We'll be able to make other planets habitable. Or, if we don't have the resources it would take to terraform whole planets, we might make large space stations orbiting our sun, or the suns of other star systems.

Earlier I mentioned the Spitzer Space Telescope. It's sole purpose was for NASA to fly it into the black hole at the center of our galaxy just to see what will happen. NASA will have the telescope sending picture and video information on it's way through the black hole. The Spitzer will either be compressed into a singularity or it could emerge through the other side at a completely different place in the universe, thus proving the theory of worm holes. And if we'll be able to travel great distances across space via worm holes, how far off could we be from FTL (Faster-than-light) travel? With an advanced space program the possibilities are endless.

And for those of you who are skeptic towards future advancements and make your judgments solely on what has already put in front of you NASA has made many products that you may or may not use in every day life that were once intended for NASA space missions. Some of these products include: Tang, Velcro, cordless tools, TV satellite dishes, the microwave oven, smoke detectors, medical imaging equipment, edible toothpaste, and invisible braces. This is only a small list of technological advancements created by our space program benefiting the average citizen and the list grows every year. Imagine items that will be in your medicine cabinet, on your kitchen counter, in your tool box, or in our hospitals in a years time. Imagine what will be available to the public in ten years time that was once on a NASA spacecraft.

However, one must also think about the third world countries in the world that either don't have clean water, or have to walk miles every day to a community pump just to have enough water to cook and drink on a daily basis. Places like Bangladesh, parts of South America, the Middle East, and Africa. Some areas outside of major cities, not to mention entire countries. By contrast have water that is either partially contaminated or altogether undrinkable. They have to rely on foreign aid for their clean water, or walk to community pumps miles away from their homes. When both these options are unavailable some people just take their chances with the water that's available, while developed countries use less than five per cent of their water supply for drinking, cooking, and cleaning.

But how can we put all of this money into research to get us into space, a process which will possibly take several generations to make any major progress, when there are millions of people who are dying from hunger and thirst in third world countries? In the countries where clean water is scarce the people have to rely on foreign aid. Many of the people of these countries that don't have clean water readily available have to walk over two kilometers every day to a community water pump to collect twenty to twenty-five liters of water and return to their village. In most places it's the women in the family that gather the water, this makes a total of over 4 kilometers and almost 30 liters of water per trip, per day. And when there is no foreign aid and no community water pumps available these people have to resort to fossil ground water, reusing wastewater or to desalinate their sea water. These methods can prove to either be bad for the environment, or detrimental to the health of citizens. And in the countries where people choose to take their chances with contaminated water sources many forms of waterborne diseases and illnesses take place. Things like parasites, cholera, and diarrhea.

To put this into perspective, 50 million people in middle eastern and Arab countries do not have clean water. Over half the people in rural Morocco do not have clean water. 1.1 billion people worldwide lack safe drinking water, 2.6 billion lack proper sanitation, and and 1.8 million die every year die from contaminated water, over ninety per cent of these people are under 5 years of age. How much would the living conditions of these countries improve if we spent just a fraction of the money

that goes into NASA funding went into clean water programs for third world countries? Yes, massive advancements and improvements could be made to technology and our own livelihood if we advance our space programs. But it could take several years to see any kind of feasible return on this program. Whereas providing clean water for less well to do countries sees an almost immediate return. Again, to put it into perspective once more. Every dollar invested into a clean water program would yield \$3 to \$34 dollars of funding for a clean water program depending on the region, and at least \$7.3 million dollars would be saved in medical costs every year in countries where the people are plagued by waterborne afflictions.

But there are also some negative aspects in improving our space program as well as helping third world countries have clean drinking water. If we spend billions of dollars every year to advance our space program we'll be constantly one-upping other countries with space programs like Russia, and China. I'm sure that the great space race to put a man on the moon created plenty of animosity between America and Russia. And given the war-like nature of any society, who's to say that dumping all this money into funding our space program won't result in creating more advanced satellites that are armed with missiles instead of information gathering devices? All it takes is a country with one too many orbital defense systems pointed at a crazy leader to move the hands of the doomsday clock a little bit closer to midnight.

You also have to take into effect the intentions of the leaders of the countries that don't have clean drinking water. Many of these countries are constantly at war with neighboring countries, or locked in civil wars. Many of these countries are run by vindictive dictators, holy men with nothing on their mind but a religious agenda, or psychotic tribe leaders. So who's to say that things will only get better if we step in to help. It's been shown many times that after a country offers foreign aid of some kind that the dictators will step in, hoard all the foreign aid for themselves, or sell it on the world market or black market and leave their people to suffer. And sometimes a country can become flooded with foreign aid, and with an overabundance of aid farmers are unable to make money selling their crops and inevitably lose their land to the dictators who confiscate their property to expand his own territory.

There is plenty of information available on this topic to fuel many a debate. But if we've gathered anything from this essay thus far, it's that there are many pitfalls on either side of this argument. But, in closing, my own personal opinion on the matter is that before we can reach for the stars, we need to provide for our fellow man and be united as a people, and as a planet in order to succeed.

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